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**A SEMANTIC AND SYNTACTIC ANALYSIS OF THE QUANTIFIER
ALL AS A DETERMINER AND A PREDETERMINER IN ENGLISH**

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Abstract

This paper provides a semantic and syntactic analysis of the quantifier *all* as a determiner and a predeterminer in English. The syntactic framework is provided by Berkeley Construction Grammar, with particular focus on the notion of unification, as well as the Determination Construction. The concept of Quantification is analysed by means of set theory as well as Langacker's (1991) approach on nominals and Davidse's (2004) discussion on quantifiers. The quantifier *all* is classified as a relative quantifier and can adopt two different meanings: a *universal* meaning, and a meaning similar to the adjective *whole*. Then, *all* is analysed by means of three different Attribute-Value Matrices (AVMs): two as a determiner, and one as a predeterminer.

Key words: quantifier, unification, specifier, maximality, AVM.

Aquest treball ofereix un anàlisi semàntic i sintàctic del quantificador *all* (tot) com a determinant i predeterminant en anglès. El marc sintàctic ve donat per la Berkeley Construction Grammar, amb especial èmfasi a la noció d'unificació, així com també en la Construcció Determinant. El concepte de Quantificació és analitzat mitjançant teoria de conjunts, així com les obres de Langacker (1991) i Davidse (2004) sobre el sintagma nominal i els quantificadors. El quantificador *all* es classifica dins dels quantificadors relatius i adopta dos significats diferents: un d'*universal* i un altre similar al de l'adjectiu *sencer*. A continuació, *all* és analitzat mitjançant tres matrius d'atributs i valors (Attribute-Value Matrices, AVM); dos d'elles com a determinant, i una com a predeterminant.

Paraules clau: quantificador, unificació, especificador, màxima, AVM.

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1. INTRODUCTION

1.1. Motivation

As a student of English Language and Literature, I have always been particularly fond of the syntax discipline. Trying to explain how language —something that is so intrinsic to the human being— works comes both as fascinating and challenging. Having my mind made up on tackling a syntactic issue for my end of degree paper, I was lucky enough to come across an interesting case during an English Syntax class. One of the exercises pointed out the ambivalent use of the quantifier *all*, however, it did not explicitly explain why the word combines with some nominals but not others. Then, I decided to look further into the use of *all* in English, hoping to find some answers.

1.2. Aims

The aim of this paper is to offer a semantic and syntactic description of the quantifier *all* in English both as a determiner and a predeterminer. The project started as a corpus-based study of the use of *all* in English; however, due to its extensive different syntactic realisations, I had to narrow down the topic. Consequently, the present study will not take other cases into account (e.g. its uses as nominal or as an adverbial), I shall instead focus only on its realisations as a determiner and predeterminer. The semantic component of the project will be mainly provided by Langacker's (1991) approach on nominals and Davidse's (2004) discussion on quantifiers and determiners. For the syntactic analysis, I have decided to use the Berkeley Construction Grammar approach, since it is the one we used in the English Syntax course at UB and shares many notions with other frameworks I was already familiar with, such as LFG (Lexical Functional Grammar). This paper will guide the reader through the different semantic and syntactic notions needed in order to interpret my proposal for the formal analysis of the quantifier *all*.

2. LITERATURE REVIEW

2.1. Berkeley Construction Grammar

For the purposes of this paper, I am going to use the Berkeley Construction Grammar (CG) approach. In this section, I will define some of the notions and terminology used in this grammatical approach in order to analyse our case of study: the quantifier *all*.

Construction Grammar is a generative, unification-based grammar. A grammar is said to be generative when it provides an explicit description of the grammar of a language, so as to license certain possible structures in that particular language. At the same time, it should rule out the possibility of having a construction or interpretation of any phrase or sentence not belonging to such language. In other words: it can distinguish between well-formed and ill-formed sentences in a language. The notion of unification can be described as an information-combinatory operation (Shieber, 2003). To properly understand this, it will be necessary to look further into these notions of ‘information’ and ‘combinatorics’. Grammatical information, which not only includes syntactic, but also semantic information (and phonological information if need be), can be represented in terms of *attributes* and *values*. The range of possible choices is the attribute, whereas the possible realisations of a given attribute are its possible values. For example, English nouns can be either singular (*sg*) or plural (*pl*); we would then have the number (*num*) as an attribute and *sg* or *pl* as possible values. These pieces of information are organised in what we call *feature structures*, that are nothing but a list of the different attribute-value pairs depicting the semantic and syntactic properties of a grammatical unit. Feature structures have often been considered as mathematical functions, for this, each attribute in a feature structure can receive one unique value. Consequently, the matrices in Fig. 1 would represent a feature structure but the one in Fig. 2 would not, since it has two different values:

Syntactic properties of <i>shoes</i>	Semantic properties of <i>shoes</i>
$\begin{bmatrix} \text{cat} & n \\ \text{lex} & + \end{bmatrix}$	$\begin{bmatrix} \text{num} & pl \\ \text{cnfg} & \text{count} \end{bmatrix}$

Figure 1. Feature structures illustrating partial representations of the syntactic and semantic properties of the word 'shoes'. (Fillmore & Kay, 1995, ch.2 p.2)

$\begin{bmatrix} \text{cnfg} & \text{count} \\ \text{cnfg} & \text{mass} \end{bmatrix}$

Figure 2. An attribute value matrix that does not represent a feature structure. (in Fillmore & Kay, 1995)

Feature structures can be noted in different manners; in this paper I will use Attribute Value Matrices (AVM), such as the ones in Fig. 1 and Fig. 2. Whenever we speak, we combine different words to make sentences and convey messages; this is where unification plays an important role.

The idea of unification can be easily illustrated by the notion of *unification of sets* in set theory. It is as follows (Ortiz & Zierer, 1968):

$$A \cup B = \{x / x \in A \vee x \in B\}$$

In the context of grammar, we need to explain the formula considering A and B two sets of feature structures. The unification of the feature structure A with the feature structure B creates a new feature structure consisting of every attribute-value pair of A and of B. For example, if A has an attribute-value pair that is [num sg] and B [configuration mass], the unification of these two sets would result in a third set whose number is singular and whose configuration is a mass noun. In our grammar, this unification is only possible if there is no conflicting information between two relevant feature structures. A *conflict* would arise in the case that there were two different structures with the same attribute but with different values (as seen in Fig. 2), as would be the case of **this shoes*, since *this* is [num sg] and *shoes* is [num pl]. By contrast, we would say that *these* and *shoes* do unify.

Consider now the article *the*. It combines with both singular and plural nouns: *the shoe* and *the shoes*. *The* would then be said to be unspecified for number [num []], i.e. it can take either singular or plural, depending on the context. Unspecified values do not conflict with other values; thus, they can unify with any given value. In a construction-based approach to language, sentences are licensed and analysed by means of the grammatical constructions that that language has in its grammar. The way we can affirm that a particular string of words of a language does not create a sentence in that language is ‘that we discover that no collection of constructions in the grammar of [the language] can be jointly unified to license that string of words and give it the structure of a sentence.’ (Fillmore & Kay 2005, ch.2 p.15). Thus, we can understand *constructions* as the rules to create phrases and sentences. Fig. 3 is a schematic representation of a construction which illustrates the relation and hierarchy of its constituents:

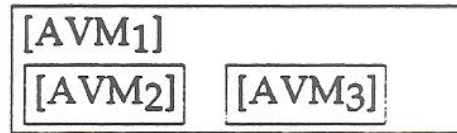


Figure 3. Schematic representation of a construction. (in Fillmore & Key, 1995)

This diagram depicts a structure with two immediate constituents. AVM1 is the AVM of the *mother box*, which gives the *external* properties of the construction or construct. AVM2 and AVM3 represent the *internal* properties and would be labelled as the left-daughter and the right-daughter respectively. An actual example of a construction is the *Determination Construction*, which we will need to present for the purpose of this paper:

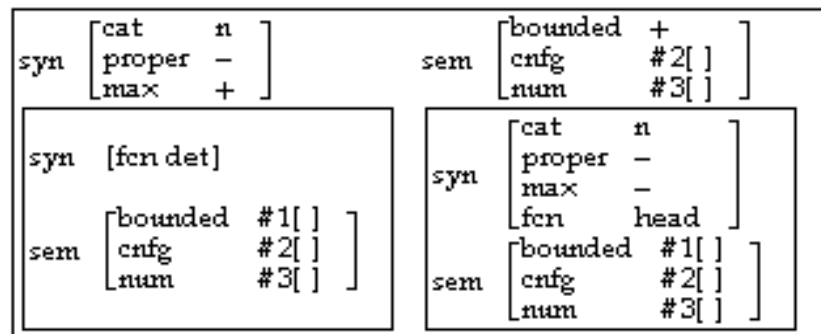


Figure 4. The Determination Construction (in Fillmore & Kay, 1995)

This construction is very similar to the Specifier rule in X-bar theory (e.g. Carnie, 2002) and has been slightly adapted since Fillmore & Kay (1995). A specifier is defined as the daughter of XP (or X'') and sister to X'. I will consider *specifier* and *determination* as synonyms and I will use them interchangeably in this paper. By looking at the external information in Fig. 5 we can induce that the Determination construction creates a nominal. It is not a proper name, since proper names cannot be determined (**the John*, **some John*); and it is maximal. The idea of *maximality* is that 'a maximal constituent can play a *major role* in a sentence, such as subject or direct object' (Fillmore & Kay 1995, ch.2 p.17). It is bounded, and its configuration and agreement will be those of the daughters. The 'pound signs' before the values indicate that this information is to be unified. That is, in the determination construction, the values for the right and the left daughter of the attributes for boundedness, configuration, and number must unify. The right daughter is

the determiner and the left daughter the nominal. I will adopt newer approaches to this construction and describe the left daughter with the attribute-value pair of [role specifier] and the right daughter as [role head] instead of using the term *function* for that attribute. The syntactic attributes of the right daughter are described as a nominal that is not a proper name and that is non-maximal. One of the most interesting characteristics of this construction is that it is non-recursive. The tree-diagram for the x-bar theory specifier rule is rather illustrative of this:

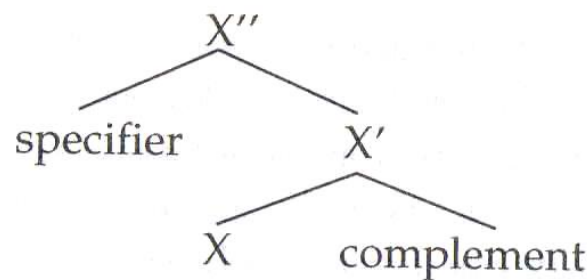


Figure 5. The Specifier Rule in X-bar theory

The right daughter of the construction is non-maximal, which blocks recursion as it is impossible to specify something that has already been specified, that is, it is a maximal projection. In other words, the combination of the specifier with a nominal creates a noun phrase. This will be decisive to distinguish between *all* as a determiner or as a predeterminer.

2.2. The notion of Quantification

Quantification is a term that makes reference to semantics. In this sense, when we talk about the quantifier *all* we are referring to its semantic category, not the syntactic one. As mentioned before, *all* can take the syntactic form of a determiner, a predeterminer, a pronoun, or even an adverb. Langacker (1991) argues that quantification presupposes some kind of instantiation, since quantity is not predicted from an unbounded type conception but rather from instances of a certain type. In other words, quantification is linked to the notion of nominal, not noun. A noun profiles an entity or *type*, for instance *cat*, whereas a nominal has a referential function, it designates an instance of such type, for example *this cat* or *some cats*. Langacker claims nominals show the notion of quantity

by two means: number (i.e. singular or plural) and quantifiers, either in absolute terms like *three cats* or proportionally as in *most cats*. Considering that a nominal profiles a single instance of a type, the role of the quantifier is to express the *size* of that instance, not the number of instances (which will always be just one) (Langacker, 1991). Quantifiers can then be classified according to Langacker into two different categories: absolute quantifiers and relative quantifiers. Absolute quantifiers specify the *cardinality* of the instance of a type by offering a ‘direct description of magnitude’ (ibid, p. 82-83); for example, *three cats* or *many cats*. In order to do so, these quantifiers make use of ‘a scale of magnitude which is discrete and normative in the case of cardinal numbers, but schematic and non-normative with numeratives.’ (Davidse, 2004, p.4). Relative quantifiers, on the other hand, are regarded as making a ‘quantitative assessment made relative to a reference mass’ (Langacker 1991, p. 83). In this sense, relative quantifiers compare the size of the profiled entity with the actual size of the reference type, evaluating whether it coincides or not; it would be the case of *all cats*, *most cats* or *no cats*. This notion of the relative quantifier is illustrated in Davidse (2004) by means of the concept of *intersection* in set theory between the profiled entity and the reference mass:

$$P \cap R_t = \{x / (x \in P) \wedge (x \in R_t)\}$$

That is, all the elements that belong to both the profile and the reference mass at the same time. Nonetheless, I do not share her analysis, as I would rather claim that the relation between the profiled entity and that of the reference mass is one of a *subset*:

$$P \subseteq R_t = \{x / (x \in P) \rightarrow (x \in R_t)\}$$

That is, for every element that belongs to P it also belongs to R_t. The intersection of two sets is intrinsically a subset of those sets; however, when we describe quantifiers we are solely interested in the size of the domain of such subset. Thus, I feel that considering this relation a subset rather than an intersection is more elegant and straightforward. This idea is also reinforced by the way in which Langacker describes relative quantifiers, as ‘identify[ing] their referent as some proportion of the reference mass (R_t), i.e., the maximal extension of a type.’ (1999, p.284). Consequently, the different relative quantifiers can be classified in three different categories. One in which the designated entity is a subset of the reference mass ($P \subseteq R_t$), as it would be the case of *most* or *some*. A second group in which the P subset happens to be exactly the whole R_t set ($P=R_t$), like

all, each, every, both, or either. And a final empty set, being no coincidence between the profile and the reference mass ($P = \emptyset$), this comprises *no* and *none*.

As Langacker explains, in a default-case interpretation of this type of quantifiers, the reference mass consists of the maximal instantiation of that type, the ‘full extension in all conceivable worlds’ (1991, p. 82) which is best exemplified by the quantifier *all*. Davidse classifies *all* as a *universal* relative quantifier, since it brings ‘identification by delineating all instances in the discourse context’ (2004, p.15-16), i.e. the reference mass. This perspective of *all* as a universal quantifier can be easily linked to the idea of generic and non-generic nominals. Pragmatically, generic contexts, often realised by bare plurals and mass nouns, can be considered equivalent to nominals containing a universal quantifier such as ‘all’. Consequently, we could claim that, broadly speaking, the following are semantically equivalent:

- (1) Kangaroos are marsupials.
- (2) All kangaroos are marsupials.

As Lyons points out (1999), universal quantifiers can be conceived as ‘approximating to universal quantification in logic’ (p.32). The logic expression of universal quantifiers would be the following:

$$\forall(x) (A(x) \rightarrow B(x))$$

The way of reading this function is as follows: \forall means ‘for every’ and (x) makes reference to any element of a domain (not a particular individual). Thus, for every element that belongs to A, it belongs to B. Taking sentence (1) as an example, A would be the notion of kangaroos and B the notion of marsupials. When we are faced with this expression, what we can induce is that for every kangaroo that we encounter, we will expect such kangaroo to be a marsupial. Hence, if something is a kangaroo, then it is a marsupial. In other words, every kangaroo in the domain of kangaroos is a marsupial. Thus, sentence (2) is very illustrative of the universal component of the quantifier *all*, as every single element of the domain meets the constraints of the predication. It is important to take into account that this universal nature of *all* is intrinsic to the context. Hence, we can have existential meanings like (2) that make reference to all ‘conceivable kangaroos’; but we can also have universal meanings of a particular context. For example, if two

speakers are making reference to the students at the University of Barcelona, one of them could predicate something about *all students* in that particular context, making reference to the totality of the students in the UB, not every student in the world; this is, in Davidse's words, 'the discourse context' (2004, p.15).

Despite its similarity, we can conceive *all* as having a slightly different meaning than the universal one we have just described. *All* can often offer the same notion as the adjective *whole*. In this sense, we understand that what *all* is predicating is that the entity it is making reference to is seen as indivisible, as its totality. It predicates the totality of the special or temporal reality of the reference mass, or all the components of a collective. For example, *all the family* and *all afternoon*, could be paraphrased as *the whole family* and *the whole afternoon*, i.e. the 'totality of the members' in the family and the 'entire time' that the afternoon lasts respectively. Note that there is a minor difference between this 'totality of members' and the contrastive universal meaning since the first regards the totality as a unique entity, whereas the latter takes into consideration every element of the reference mass in the discourse context. In the same way, when we have *all* combined with a cardinal it can be paraphrased as 'the whole group of'. For instance: *all six students*, as *the whole group of six students*, it would be impossible to have a universal meaning: **every six students*.

3. RESEARCH QUESTION AND METHODOLOGY

The purpose of this paper is to offer a formal analysis and account of the quantifier *all* as a determiner and predeterminer in English, supported with the examples found on the corpus. The corpus used has been a "subcorpus" of the *whodunnit* corpus. It is constituted by twenty-four novels of the twentieth and twenty-first century—Rowling's *Harry Potter* or Agatha Christie's *Poirot* amongst others. There was a total of 9210 instances of *all* in the corpus, a considerable amount from which significant hypothesis can be made. Considering the fact that the aim of this project is not analysing the use of *all* from a diachronic perspective, but rather the different realisations it can have, this corpus was perfectly suitable for my purposes. The methodology used has been based on a series of trial-and-error attempts to formally describe the quantifier *all* by making a hypothesis and trying its possible success with different examples from the corpus. In the following

section, I will present only the final analysis and description by means of different AVMs exemplified with instances from the corpus.

4. FORMAL ANALYSIS OF THE QUANTIFIER *ALL*

We have seen how *all* has a rather polysemic meaning. It can be paraphrased as ‘every’ (*all kangaroos are marsupials = every kangaroo is a marsupial*), taking then a universal meaning. Contrastively, it can also take the meaning of ‘whole’, describing the domain as an entire entity in spatio-temporal terms or group of individuals. Due to this polysemic character of the quantifier *all*, I find it necessary to provide different syntactic analysis that will illustrate this semantic difference. I have drawn different AVMs for them that will be explained and justified in the following passages. For the purposes of this paper, I have given determiners combinatoric information known as *valance* (such as with verbs and other structures), which ‘determine the number and kind of things that co-occur’ with them (Fillmore & Kay, 1995, ch.4 p.2). In this way, the AVMs will be self-explanatory of what the quantifier *all* can unify with.

4.1. The universal quantifier

All as a universal quantifier functioning as a determiner has two different realisations: one that unifies with plural countable nouns, and a second one that unifies with singular mass nouns. They would look as follows:

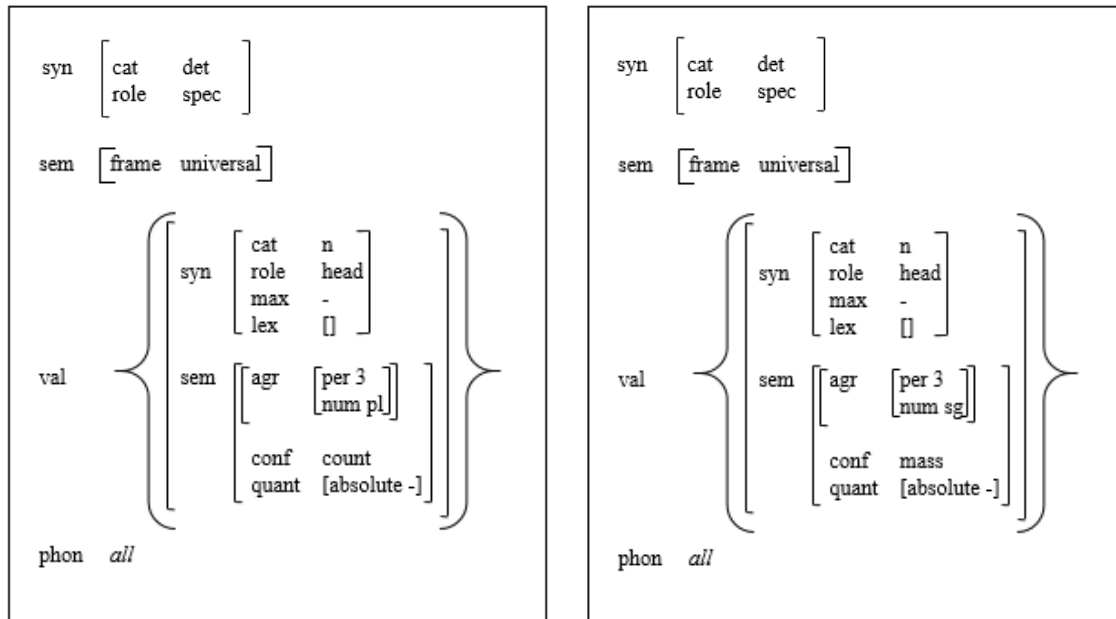


Figure 5. AVM for *ALL* as a universal quantifier, unifying with plural countable nouns and singular mass nouns respectively.

The syntactic features of the AVM are [cat det] [role spec]. *All*, in this context, is a determiner whose role is to specify. In other words, it determines the right daughter in the Specifier construction. For the semantic features we have [frame universal]. I have chosen the term ‘universal’ to label this particular meaning of the quantifier as making a reference to a generic; in other words, as predicating a characteristic intrinsic to everything that the quantifier is specifying. In this sense, it rules out the aforementioned other meaning of *all* as *whole*. If we pay attention at the valance, we can see how both AVMs differ only on their agreement and configuration features, which I will tackle at the end of this section. The determiner *all* will specify a nominal; therefore, the syntactic category of its valance will be [cat n]. This nominal will be the head of the Determination construction, thus having the attribute [role head]. By definition, the Determination construction creates constructs that are maximal but whose right daughter is non-maximal, which, as I have mentioned above, blocks recursion. Plural countable nouns and singular mass nouns are intrinsically unspecified for maximality, as they can be generic bare nominals functioning as subjects, and therefore maximal, as in the following sentences:

- (3) Mud caked on my boots (*The Firm*, John Grisham)
- (4) Students aren’t supposed to know about the Sorcere’s Stone (*Harry Potter and the Philosopher’s Stone*, J.K. Rowling)

However, they can also be specified and consequently [max –]:

- (5) The rain and the mud from the early morning were long forgotten. (*A Painted House*, John Grisham)
- (6) The students gathered around him. (*Harry Potter and the Philosopher's Stone*, J.K. Rowling)

Thus, the attribute [max –] in the valence of the AVM will only allow nominals that can still be specified. It might seem that an attribute such as [lex +] would also reinforce this idea of *all* unifying with a nominal that is susceptible to be specified, ruling out by means of this feature items such as *the mud* and *the students* in (5) and (6) that are constituted by more than one word. Nonetheless, it would also rule out modified noun constructions such as *dark mud* or *new students*, which we do not want to block. Consequently, the value of the attribute lexical is unspecified. This triggers the necessity of adding an attribute that blocks other nominals such as (7):

- (7) All six students were charged with felony possession (*The Last Juror*, John Grisham).

I would argue that nominals quantified with absolute quantifiers, which include cardinals and other forms such as *much* and *many*, are unspecified for maximality. The quantifiers in such constructions can be both determiners and adjectives, giving rise to sentences like (8), where they specify the noun they co-occur with and consequently, are determiners.

- (8) Six students were charged with felony possession.

Contrastively, in sentence (7), *six* is not specifying *students*, but modifying it. Thus, it would be the case of a modified-nominal construction which is unspecified for maximality. Consequently, the possibility of having such nominal as the right daughter of the Determination construction would still be possible.

I find it necessary, nonetheless, to add an attribute that also blocks the possibility of having nominals such as the one in sentence (7), since I would claim these do not fall under the semantic frame of universality but rather our second semantic notion of *whole*. The nominal in (7) would be paraphrased as ‘the whole group of six students’, and therefore would be a construct of the AVM discussed later. Thus, the feature [quantifier [absolute –]] will block any nominal that has an absolute quantifier. A less precise

attribute-value pair like [quantifier –] would also have worked because we do not want *all* to unify with an already quantified nominal. Nonetheless, since relative quantified nominals are maximal, they would automatically be blocked by the [max –] of the valance; for this, I have decided to select the complex feature set [quantifier [absolute –]] instead. Finally, the agreement and configuration features of the attribute are what makes us generate two distinct AVMs, one for plural countable nouns, and another one for singular mass nouns. In this way, we block singular count nouns, which cannot take the universal semantic meaning; the following variation of sentence (7) is simply inconceivable:

- (9) *All student was charged with felony possession.

It is interesting to point out, however, that there are some nouns that allow both countable and non-countable interpretations. As a count noun it denotes an instance, an individuated separate entity, whereas as a mass noun it denotes a substance (Huddleston & Pullum, 2002). The example Huddleston uses to illustrate this is the word *cake*:

- (10) a. May I have another cake? (countable interpretation)
 b. May I have more cake? (non-countable interpretation)

Hence, our analysis of *all* as a universal determiner blocks *cake* as in (10a) but does not block it as in (10b). If we were to say *all cake*, we would be making reference to *cake* as a substance.

Langacker considers singular mass nouns and plural countable nouns as having many characteristics in common. He even considers plural countable nouns as a subclass of mass nouns. On the one hand, ‘the profile of the plural predication is a region that is unbounded within its scope in the domain of instantiation’ (1991, 76), in the same way that bare mass nouns profile unbounded entities. On the other hand, neither singular mass nouns nor plural countable nouns can be pluralized. Furthermore, they both can be maximal nominals without being quantified nor determined. Langacker argues that a plural nominal designates a mass constituted by an undetermined number of entities of the same type; thus, we can think of a plural nominal as ‘a mass formed by replicating indefinitely many times a discrete entity that we are accustomed to dealing with individually’ (ibid, 78). Consequently, broadly speaking, the only difference between a

singular mass noun and a plural mass noun is that the latter is a *replicate mass* whereas the former is a rather *uniform mass*. Taking all this into close consideration, we could maybe find a possible way of unifying the two AVMs for the analysis of *all* as a universal determiner. The only difference between them at the moment is that they have different values in the agreement and configuration of their valances. Plural countable nominals are [num pl] [conf count] whereas singular mass nouns are [num sg] [conf mass]. What these two kinds of nominals have in common, amongst other things that we have already mentioned, is their unbounded character. The following figure taken from Fillmore & Kay (1995) illustrates the notion of boundedness:





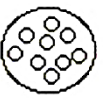
		NUMBER		
		singular	plural	
CONFIGURATION	mass	 mud	IMPOSSIBLE	bounded -
		 the mud	IMPOSSIBLE	bounded +
	count	IMPOSSIBLE	 shoes	bounded -
		 (the) shoe	 the shoes	bounded +

Figure 6. Representation of number, configuration, and boundedness. (in Fillmore and Kay, 1995)

Thus, we could consider a single unified AVM that has the attribute-value pair [bound -], which will automatically select only singular mass nouns and plural countable nouns, as we can infer from Fig. 6. With this new feature and by leaving the number agreement and the configuration features unspecified we will only need one AVM to describe the use of *all* as a universal determiner. This is how the final version of our AVM looks like:

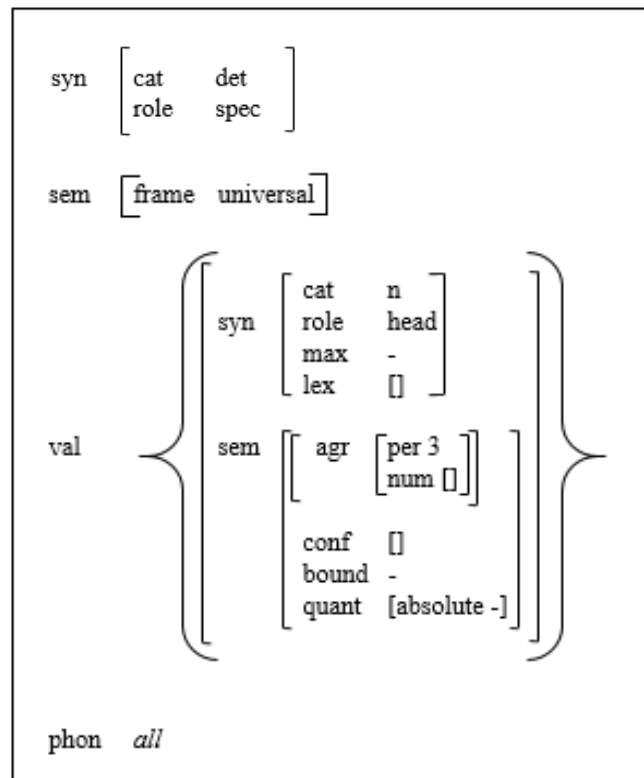


Figure 7. AVM for ALL as a universal quantifier.

4.2. All as whole

In this section I will analyse the different syntactic realisation that the quantifier *all* has with its semantic meaning of ‘whole’. When it comes to this meaning, *all* can be both a determiner and a predeterminer.

4.2.1. The determiner

The AVM for *all* as a determiner with the meaning of *whole* is the following:

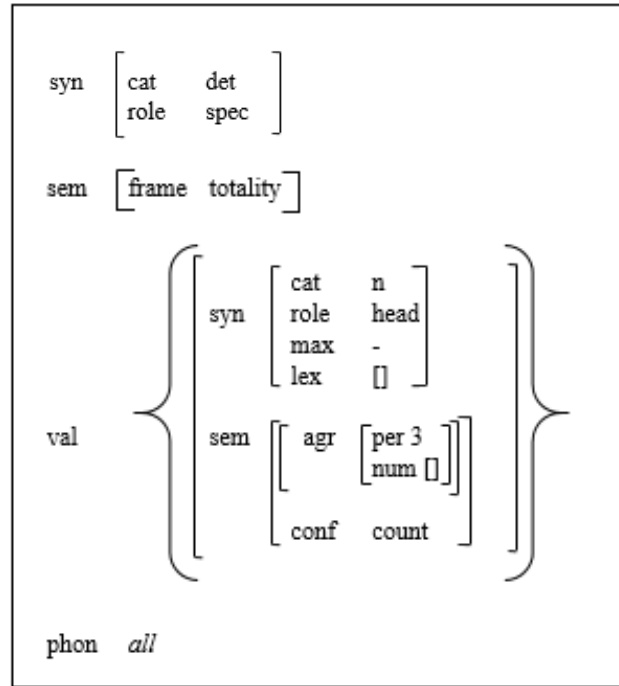


Figure 8. AVM for *ALL* as a determiner with the semantic meaning of ‘whole’.

As in the previous AVM, *all* is a determiner whose role is to specify. Thus, it is the left daughter in the Determination construction. Its semantics, in this case, is different from the one we have discussed before; hence, the semantic frame is [frame totality] instead. I have decided to label the frame with this term of ‘totality’ to evoke the notion of *whole*, as discussed before, of entailing the entire space and/or time of the reference mass or the components of a group as a unique entity. This leaves out of the analysis any nominal with a generic/universal meaning. Let’s now have a look at the valance: since we are in the realm of the Determination construction, the valance of *all* will be the right-daughter in the construction. Consequently, its syntax is [cat n], [role head], [max –], [lex []]. *All* will unify with a nominal that will be the head of the construction, which is intrinsically non-maximal, and which can be either a single nominal or a modified nominal. To this extent, the AVM for the quantifier *all* as a determiner for the universal frame and for the totality frame are completely the same; it is in the semantics of its valance where we can see some differences. The configuration of its valance is countable nouns. Mass nouns are ruled out, for example noun phrases like *all mud*, which would fall into the previous universal reading. The agreement features are [per 3] and [num []]. Hence, *all* takes any kind of countable noun, either singular or plural. Under this analysis, we would then have

expressions that combine *all* with cardinals like we have previously seen in example (7). This analysis does not block the unification of *all* with the cardinal *one*, since there is no attribute-value pair limiting unification with singular nominals nor absolute quantifiers. At first sight, this might look like a potentially ill-formed construction, but even if it does not sound very natural, there are some instances of it in the corpus:

- (11) Tuppence noticed that all one wall was devoted to works on crime and criminology. (*The Secret Adversary*, Agatha Christie)

In the case of example (11), we would interpret it as having the entire space of *one* wall devoted for those books. This AVM analysis does not explicitly block *all* with other quantifiers like the previous ones did. Langacker argues that, intuitively, if relative quantifiers are considered to be grounding expressions,

[I]t makes sense that they do not occur with one another, nor with the most obvious instances of grounding predications, namely articles and demonstratives: **the some dogs*; **that every dog*; **an any dog*; **those most dogs*; **the all dogs*; etc. The absolute quantifiers do however occur with demonstratives and the definite article, and sometimes even with relative quantifiers. (1991, p.82-83)

This goes in line with the idea I suggested before, that absolute quantifiers can function as adjectives and therefore be part of a modified-nominal construction rather than a Determination construction and still be susceptible to be quantified by means of a relative quantifier. At the same time, constructs like **all all students* or **all some students* are not possible. The fact that the valance is non-maximal is what allows (7) or (10) to occur but at the same time does not allow relative quantifiers to co-occur. Nominals quantified by means of relative quantifiers are maximal, whereas those with absolute quantifiers are unspecified for maximality. A proof could be that the former cannot be specified whereas the latter can: **the all students* but *the one wall*. The valance in the AVM does not allow unification between *all* and other relative quantifiers nor specified nominals, nonetheless allows unification with absolute quantifiers. This might be a problem making our grammar overgenerate. We have seen how it is possible for *all* to combine with cardinals, whether it should also unify with *any* relative quantifier is arguable. Considering that the configuration is countable nouns, quantifiers like *much* or *little* that unify with mass nouns are already blocked. However, *many* and *few* are not. I have not found any instance of *all many* nor *all few* in the corpus, which is certainly not determinative evidence of whether

or not the following expressions could be possible, I am inclined towards thinking they are not ill-formed:

(12) ? All few things left to do must be done by Friday.

(13) ? All many pages must be read.

On the other hand, the analysis does generate constructions with singular countable nouns. This will include rather idiomatic expressions of time like the ones in (13) and (14):

(14) The baby cried all day. (*A Painted House*, John Grisham)

(15) I have been calling all morning. (*The Summons*, John Grisham)

These examples are extremely illustrative of the ‘totality’ notion since the idea they convey is that of ‘during the entire time’, i.e. totality in time seen as a single entity, not making a generic assumption on the notion of *day* or *morning*.

4.2.2. The predeterminer

After the analysis of *all* as a determiner, let’s now consider it as a predeterminer and see how it behaves. This analysis will include sentences like the following:

(16) All the adults were gathering in the kitchen. (*A Painted House* John Grisham)

(17) She needed all her energy. (*Deception Point*, *Down Brown*)

In this case the AVM will differ rather considerably from the previous ones. The syntactic category is predeterminer and its role modifier. I will further comment on its role in the next section, for now, it is just important to notice that it will not be a part of the Determination Construction. With regards to the semantic frame, it also falls under ‘totality’. It is again making reference to the whole, not a universal fulfilled by every element of the domain; in this case, the totality of the noun phrase it modifies. In this way, we could paraphrase (15) as *the whole group of adults* and (16) as *the whole of her energy* or *her entire energy*. The predeterminer *all* unifies with a grammatical unit whose syntactic features are [cat n] [max +]; therefore, a noun phrase. Regarding the agreement and configuration, it is unspecified; hence, it will unify with both mass nouns and countable nouns, either singular or plural. Now, we need some attribute in the valance

that limits unification to just a certain kind of noun phrases. We do not want *all* to unify with noun phrases that are already quantified by relative quantifiers (**all all students*, **all some students*). There will be no problem regarding absolute quantifiers as we have already considered them as being unspecified for maximality and therefore when combined with *all* we consider them to be part of a modified-nominal construction that can still be specified, not a case of *all* being a predeterminer. We could consider boundedness as our limiting attribute since, as Fillmore & Kay (1995) argue, ‘all determined nominal constituents are bounded whether or not their right daughters are bounded.’ (ch.3 p.5) Thus, any construct realised by the determination construction is bounded.

Using the examples from the previous Fig.6 of *boundedness*, we could then say things like *all the shoe*, *all the shoes* and *all the mud*, which is consistent with the agreement and configuration values we have given to the AVM, since we have singular mass noun and both singular and plural countable nouns. It also works for our purpose of blocking quantifiers, both absolute and relative, that Fillmore and Kay analyse as unbounded. At the same time, demonstratives, possessives, and genitives are considered to be unspecified for boundedness. Thus, an attribute-value pair [bound +] seems to be a good fit. Hence, we can have nominal units like the ones in (15) and (16). The problem of having boundedness as our attribute arises with the indefinite article *a*. Any determined construction will be bounded; thus, *a shoe* is bounded. Our value for number agreement is unspecified because we do not want to block constructions like the ones in (18):

- (18) [...] with all those people on the farm and all that cotton to pick. (*A Painted House*, John Grisham)

Due to the fact that we need number singular as a possible value, it will not block *a shoe*. My proposal to solve this problem is to use the value *definiteness* instead. If we pay close attention to (15), (16) and (17), we find definite determiners in all of them. Taking into consideration Davidse’s (2004) classification of the English determiners and quantifiers, we can see how *definite* includes the article *the*, as well as demonstratives, possessives, and genitives:

	singular count	plural count	mass
absolute quantifiers		zero	zero
	one	two, three, four, etc.	
		many, a few, etc.	much, a little, etc.
indefinite determiners	a		
	sm, any, no		
relative quantifiers	each, every, etc.	all, most, etc.	all most, etc.
definite determiners	demonstratives, possessives, genitives		
	the		

Table 1. Distribution of the main quantifier and determiner classes over singular count, plural count, and mass nouns. (In Davidse, 2004)

Thus, using [def +] in our AVM will exclude the indefinite article *a*. Since we already mentioned we do not want the predeterminer *all* to unify with other quantifiers, such attribute will do nothing but reinforce this. The AVM for the predeterminer *all* would look like this:

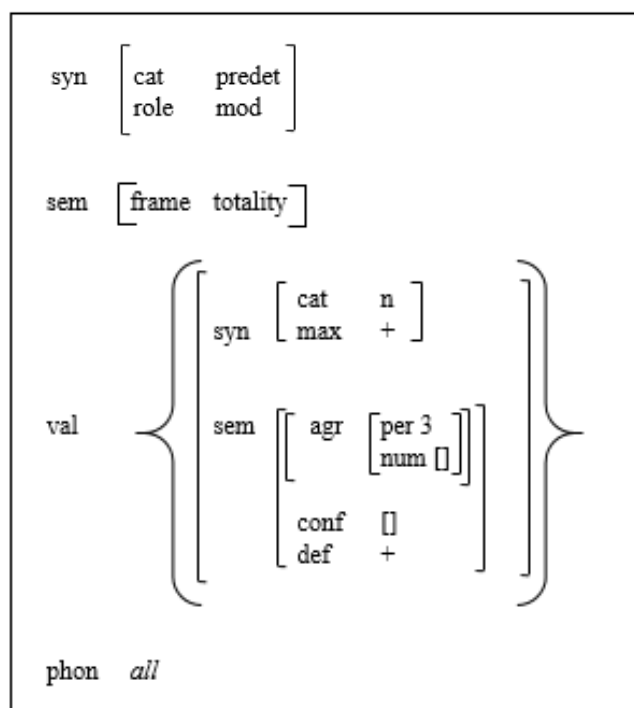


Figure 7. AVM for *ALL* as a predeterminer.

I would like to consider proper nouns under the notion of predetermination. Proper nouns are very interesting elements both syntactically and semantically speaking. They take only one unique reference. In this sense, we could say that they seem to function analogously to definite noun phrases. Nonetheless, proper nouns cannot be determined,

at least not in English. There are different opinions whether this is because proper nouns are intrinsically definite, or they are merely semantically similar to definite noun phrases. Lyon (1999) argues that if proper nouns are considered to be definite, then it would clash with the idea that determiners are the grammatical category that carry the definite feature. A possible solution would be to consider such feature to belong to the phrase rather than the lexical elements. Thus, proper names can be definite because they are maximal. Another possible perspective would be to consider that proper nouns are accompanied by a phonetically null determiner; which is not possible in our approach of Construction Grammar. If we do consider proper nouns as being definite, then our AVM for *all* as a predeterminer allows it to unify with proper names. Consider the following sentences:

(19) All New York was covered in ashes.

(20) ?All Paul was covered in chocolate.

I would claim (19) is a possible sentence in English, in this sense it would be modifying New York with the meaning of ‘the whole city’. However, I am not so certain a sentence like number (20) would be possible. Nonetheless, if it were, it would definitely be a case of the semantic meaning of *whole*: the whole body was covered in chocolate.

4.3. The Predetermination construction

We have made constant reference and use of the Determination Construction in this paper. The problem arises with the construction that we should use for *all* as a predeterminer. This would be beyond the scope of this paper and needs to be tackled in future research, however, I would like to describe some of the characteristics that the Predetermination construction would have. Even if in general terms it might seem possible to use the Determination construction for the predeterminer, it is actually impossible. The fact that the Determination construction is non-recursive has two consequences. On the one hand, we cannot re-specify an element that has already been specified. On the other hand, it is impossible to use this construction by the mere element that makes recursion impossible: the fact that the right-daughter is non-maximal. Thus, it would be impossible to say *all+the adults*, such as in (16) by means of the Determination Construction. Another thing to take into account is the role we have given to *all*. As a determiner *all* is a specifier. I would claim that as a predeterminer it is not specifying but rather modifying the noun

phrase. It is an external modifier. Thus, we would need a *Predetermination Construction* that would have a predeterminer as the left daughter of the construction with [role modifier]. As the right daughter, we would have a construct of the Determination construction; hence, a specified noun phrase.

5. CONCLUSIONS

This paper has attempted to analyse the semantic and syntactic characteristics of the quantifier *all* in English. I have introduced the notion of unification in Construction Grammar together with the concept of construction. These are the elements that allow for a grammar to produce constructs that are possible in the language of that grammar. Constructions are the rules that grammars have in order to put words in combination, whereas unification ensures that the information of the words combined does not clash. I have provided an insight on the realm of quantification as argued in Langacker (1991) and Davidse (2004). Quantifiers are a semantic category that can have different syntactic realisations. We have distinguished between absolute quantifiers and relative quantifiers. Both types express the size of a set in different manners. Absolute quantifiers, which comprise the cardinals, assess the size in relation to a scale. Relative quantifiers, on the other hand, provide a quantitative assessment in relation to the reference mass. This has been linked to the notion of *subset* in set theory, with *all* being an instance of a quantifier whose profile is the entire reference mass. I have explained the semantic distinction of *all* as ‘every’, what is often referred to as *universal* quantifier, and a second one comprising the notion of ‘whole’. Taking these semantic features into consideration, I have proposed three different syntactic analysis of the quantifier that I have tested and supported with examples from the corpus: two as a determiner and one as a predeterminer. *All* as a determiner has two different realisations following the two semantic meanings I have described. With a universal meaning, *all* unifies with generic nominals, i.e. singular mass nominals and plural countable nominals that have not been quantified yet. As regards to *all* meaning ‘whole’, we have seen how it combines with nominals. I have argued how these nominals can be a case of a modified-nominal construction by means of absolute quantifiers. I have also proposed an analysis for *all* as a predeterminer that has arisen questions about proper nouns being susceptible to being predetermined or not. Finally, I

have argued against the possibility of the predeterminer *all* being the left daughter of the Determination Construction, accounting for the characteristics of a ‘Predetermination’ Construction.

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